



#4

## SEQUENCE LISTING

<110> Fount, Steven K.H.  
Hadlock, Kenneth G.

<120> Prevention and Treatment of HCV Infection Employing  
Antibodies that Inhibit the Interaction of HCV Virions  
with Their Receptor.

<130> 2002850-0009

<140> 09/728,720

<141> 2000-12-01

<160> 35

<170> PatentIn Ver. 2.1

<210> 1

<211> 160

<212> DNA

<213> Hepatitis C Virus

<400> 1

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caacacccctg cactgccccca ctgattgctt ccgcaagcat ccggacgcca catactctcg 120
gtgaggctcc ggtccctgga tcacaccag gtgcctggc 160
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<210> 2

<211> 160

<212> DNA

<213> Hepatitis C Virus

<400> 2

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caacaccttg cgtgccccca ctgattgttt ccgcaagcat ccggaagcca cgtactctcg 120
gtgaggctcc ggtccctgga ttacgccag gtgcctggc 160
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<210> 3

<211> 160

<212> DNA

<213> Bovine Pancreatic Ribonuclease A

<400> 3

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ccgcaccttg atctgccccca cggactgctt ccggaagcac ccgaggcta cttacacaaa 120
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atgtggctcg gggccctggt tgacacctag gtgcctagta

160

<210> 4

<211> 160

<212> DNA

<213> T7 Bacteriophage

<400> 4

tggcacaggg ttcaccaaga cgtgtggggc ccccccattgt aacatcgggg gggtcggcaa 60  
taacaccttg acttgcccca cggactgttt ccggaagcac cccgaggcca cttacaccaa 120  
atgtggttcg gggccttggc tgacacctag gtgcatagtt 160

<210> 5

<211> 166

<212> DNA

<213> Bacterial Protein

<400> 5

ctccactggc tacaccaaga cttgcggcgc accaccctgc cgcattagag ctgacttcaa 60  
tgccagcatg gacttgttgt gcccacggga ctgttttagg aagcatcctg ataccaccta 120  
catcaaattg ggctctgggc cctggctcac gccaaagtgc ctgatac 166

<210> 6

<211> 167

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Synthetic

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ctccactggt tcacaaaac ttgoggcgca ccaccctgcc gcatcagagc tgactttaat 60  
gccagcaggg acctgctgtg ccccacggac tgtttcagga agcatcctga agccacttac 120  
atcaaattgt gctctggggc cccctgtga cgccaaagt cctaata 167

<210> 7

<211> 166

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Synthetic

<400> 7

cgggactggg ttcactaaga catgcggtgc accaccttgc cgcattagga aagactacaa 60  
 cagcactatc gatttattgt gccccacaga ctgttttagg aagcaccag atgtaccta 120  
 tcttaagtgt ggagcagggc cttggttaac tcccaggtgc ctggta 166

<210> 8  
 <211> 166  
 <212> DNA  
 <213> Hepatitis C Virus

<400> 8  
 tgggactggg ttcactaaga catgcggtgc accaccttgc cgcattagga gggactgcaa 60  
 cggaaacctc gacctattgt gccccacaga ctgtttcaga aagcaccag atactaccta 120  
 ccttaagtgt ggagcggggc cttggttgac ccccaaagtc atggta 166

<210> 9  
 <211> 160  
 <212> DNA  
 <213> Hepatitis C Virus

<400> 9  
 ctcaactgga ttcaccaaag tgtgcggagc gccccctgt gtcacggag gggcgggcaa 60  
 caacaccttg cgtgccccca ctgattgttt ccgcaagcat ccggaagcca cgtactctcg 120  
 gtgcggctcc ggtccctgga ttacgccag gtgcctggtc 160

<210> 10  
 <211> 160  
 <212> DNA  
 <213> Hepatitis C Virus

<400> 10  
 tggcacaggg ttcaccaaga cgtgtggggc ccccccattgt aacatcgggg gggtcggcaa 60  
 taacaccttg acttgcccc cggactgttt ccggaagcac cccgaggcca cttacaccaa 120  
 atgtggttcg gggccttggc tgacacctag gtgcatagtt 160

<210> 11  
 <211> 164  
 <212> DNA  
 <213> Hepatitis C Virus

<400> 11  
 ctccactgtt tcacaaaaac ttgcggcgca ccacctgcc gcatcagagc tgactttaat 60  
 gccagcacgg acctgctgtg cccacaggac tgtttcagga agcatcctga agccacttac 120  
 atcaaagtgt gctctggggc cctgtgacgc caaagtgcct gata 164

<210> 12  
<211> 167  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:Synthetic

<400> 12  
tgggactggg ttactaaga catgcggtgc accaccttgc cgcattagga gggactgcaa 60  
cggaaccctc gacctattgt gcccacaga ctgtttcaga aagcaccag atactaccta 120  
ccttaagtgt ggagcggggg ccttggttga ccccaaagt catggtg 167

<210> 13  
<211> 8  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Flag Epitope

<400> 13  
Asp Tyr Lys Asp Asp Asp Asp Lys  
1 5

<210> 14  
<211> 10  
<212> PRT  
<213> T7 Bacteriophage

<400> 14  
Met Ala Ser Met Thr Gly Gly Gln Met Gly  
1 5 10

<210> 15  
<211> 15  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:S-Tag Sequence

<400> 15  
Lys Glu Thr Ala Ala Ala Lys Phe Glu Arg Gln His Met Asp Ser

1

5

10

15

<210> 16  
<211> 20  
<212> DNA  
<213> Hepatitis C Virus

<400> 16  
cgcgacacraa gtasggyact

20

<210> 17  
<211> 21  
<212> DNA  
<213> Hepatitis C Virus

<220>  
<221> variation  
<222> (9)  
<223> n is inosine (i)

<220>  
<221> modified\_base  
<222> (9)  
<223> i

<400> 17  
cgcatggcnt gggayatgat g

21

<210> 18  
<211> 32  
<212> DNA  
<213> Hepatitis C Virus

<400> 18  
cgaagcttca tatgatcgct ggtgctcact gg

32

<210> 19  
<211> 38  
<212> DNA  
<213> Hepatitis C Virus

<400> 19  
gcggatccct gcagctacaa actggcttga agaatcca

38

<210> 20  
<211> 34  
<212> DNA  
<213> Hepatitis C Virus

<400> 20  
cgcatatgga gctcgcgggg gccactggg gagt 34

<210> 21  
<211> 38  
<212> DNA  
<213> Hepatitis C Virus

<400> 21  
gctctagact gcagctatat gccagcctgg agcaccat 38

<210> 22  
<211> 34  
<212> DNA  
<213> Hepatitis C Virus

<400> 22  
cgctcgagcc atggttggcg gggctcattg gggc 34

<210> 23  
<211> 40  
<212> DNA  
<213> Hepatits C Virus

<400> 23  
tcgaattcgg atcctacaaa gcacctttta ggagataagc 40

<210> 24  
<211> 34  
<212> DNA  
<213> Hepatitis C Virus

<400> 24  
cgctcgagcc atggttttcg gcggccattg ggtg 34

<210> 25  
<211> 40

<212> DNA  
<213> Hepatitis C Virus

<400> 25  
tcgaattcgg atcctacaga gacgctttaa ggaggtaggc

40

<210> 26  
<211> 23  
<212> DNA  
<213> Hepatitis C Virus

<220>  
<221> modified\_base  
<222> (15)  
<223> i

<400> 26  
tggttcggbt gywcntggat gaa

23

<210> 27  
<211> 26  
<212> DNA  
<213> Hepatitis C Virus

<220>  
<221> modified\_base  
<222> (9)  
<223> i

<220>  
<221> modified\_base  
<222> (18)  
<223> i

<400> 27  
taatgccana rcckrtangg gtagtc

26

<210> 28  
<211> 379  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Pdisplay Vector  
Sequence with E2 insert of Sflb-E2

<400> 28

Met Glu Thr Asp Thr Leu Leu Leu Trp Val Leu Leu Leu Trp Val Pro  
1 5 10 15

Gly Ser Thr Gly Asp Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Gly Ala  
20 25 30

Gln Pro Ala Arg Ser Thr Thr Tyr Thr Thr Gly Gly Ala Ala Ser Arg  
35 40 45

Thr Thr Gly Thr Phe Thr Ser Leu Phe Asn Ala Gly Ser Ser Gln Lys  
50 55 60

Ile Gln Leu Ile Asn Thr Asn Gly Ser Trp His Ile Asn Arg Thr Ala  
65 70 75 80

Leu Asn Cys Asn Asp Ser Leu Asn Thr Gly Phe Leu Ala Ala Leu Phe  
85 90 95

Tyr Val His Arg Phe Asn Ala Ser Gly Cys Pro Ala Arg Met Ala Ser  
100 105 110

Cys Arg Ser Ile Asp Ala Phe Asp Gln Gly Trp Gly Pro Ile Thr Tyr  
115 120 125

Ala Glu Ser His Ser Ser Asp Gln Arg Pro Tyr Cys Trp His Tyr Ala  
130 135 140

Pro Lys Pro Cys Gly Ile Val Pro Ala Ser Gln Val Cys Gly Pro Val  
145 150 155 160

Tyr Cys Phe Thr Pro Ser Pro Val Val Val Gly Thr Thr Asp His His  
165 170 175

Gly Val Pro Thr Tyr Ser Trp Gly Glu Asn Glu Thr Asp Val Leu Leu  
180 185 190

Leu Asn Asn Thr Arg Pro Pro Gln Gly Asn Trp Phe Gly Cys Thr Trp  
195 200 205

Met Asn Gly Thr Gly Phe Thr Lys Thr Cys Gly Gly Pro Pro Cys Asn  
210 215 220

Ile Gly Gly Val Gly Asn Asn Thr Leu Thr Cys Pro Thr Asp Cys Phe  
225 230 235 240

Arg Lys His Pro Glu Ala Thr Tyr Thr Lys Cys Gly Ser Gly Pro Trp





Ala Phe Asp Gln Gly Trp Gly Pro Ile Thr Tyr Ala Glu Ser His Ser  
85 90 95

Ser Asp Gln Arg Pro Tyr Cys Trp His Tyr Ala Pro Lys Pro Cys Gly  
100 105 110

Ile Val Pro Ala Ser Gln Val Cys Gly Pro Val Tyr Cys Phe Thr Pro  
115 120 125

Ser Pro Val Val Val Gly Thr Thr Asp His His Gly Val Pro Thr Tyr  
130 135 140

Ser Trp Gly Glu Asn Glu Thr Asp Val Leu Leu Leu Asn Asn Thr Arg  
145 150 155 160

Pro Pro Gln Gly Asn Trp Phe Gly Cys Thr Trp Met Asn Gly Thr Gly  
165 170 175

Phe Thr Lys Thr Cys Gly Gly Pro Pro Cys Asn Ile Gly Gly Val Gly  
180 185 190

Asn Asn Thr Leu Thr Cys Pro Thr Asp Cys Phe Arg Lys His Pro Glu  
195 200 205

Ala Thr Tyr Thr Lys Cys Gly Ser Gly Pro Trp Leu Thr Pro Arg Cys  
210 215 220

Ile Val Asp Tyr Pro Tyr Arg Leu Trp His Tyr Pro Cys Thr Val Asn  
225 230 235 240

Phe Thr Ile Phe Lys Val Arg Met Tyr Val Gly Gly Met Glu His Arg  
245 250 255

Leu Asn Ala Ala Cys Asn Trp Thr Arg Gly Glu Arg Cys Asp Leu Glu  
260 265 270

Asp Arg Asp Arg Ser Glu  
275

<210> 30

<211> 251

<212> PRT

<213> Hepatitis C Virus

<400> 30

Ile Gln Leu Ile Asn Thr Asn Gly Ser Trp His Ile Asn Arg Thr Ala  
1 5 10 15

Leu Asn Cys Asn Asp Ser Leu Asn Thr Gly Phe Leu Ala Ala Leu Phe  
 20 25 30  
 Tyr Val His Arg Phe Asn Ala Ser Gly Cys Pro Ala Arg Met Ala Ser  
 35 40 45  
 Cys Arg Ser Ile Asp Ala Phe Asp Gln Gly Trp Gly Pro Ile Thr Tyr  
 50 55 60  
 Ala Glu Ser His Ser Ser Asp Gln Arg Pro Tyr Cys Trp His Tyr Ala  
 65 70 75 80  
 Pro Lys Pro Cys Gly Ile Val Pro Ala Ser Gln Val Cys Gly Pro Val  
 85 90 95  
 Tyr Cys Phe Thr Pro Ser Pro Val Val Val Gly Thr Thr Asp His His  
 100 105 110  
 Gly Val Pro Thr Tyr Ser Trp Gly Glu Asn Glu Thr Asp Val Leu Leu  
 115 120 125  
 Leu Asn Asn Thr Arg Pro Pro Gln Gly Asn Trp Phe Gly Cys Thr Trp  
 130 135 140  
 Met Asn Gly Thr Gly Phe Thr Lys Thr Cys Gly Gly Pro Pro Cys Asn  
 145 150 155 160  
 Ile Gly Gly Val Gly Asn Asn Thr Leu Thr Cys Pro Thr Asp Cys Phe  
 165 170 175  
 Arg Lys His Pro Glu Ala Thr Tyr Thr Lys Cys Gly Ser Gly Pro Trp  
 180 185 190  
 Leu Thr Pro Arg Cys Ile Val Asp Tyr Pro Tyr Arg Leu Trp His Tyr  
 195 200 205  
 Pro Cys Thr Val Asn Phe Thr Ile Phe Lys Val Arg Met Tyr Val Gly  
 210 215 220  
 Gly Met Glu His Arg Leu Asn Ala Ala Cys Asn Trp Thr Arg Gly Glu  
 225 230 235 240  
 Arg Cys Asp Leu Glu Asp Arg Asp Arg Ser Glu  
 245 250

<210> 31

<211> 215

<212> PRT

<213> Hepatitis C Virus

<400> 31

Phe Asn Ala Ser Gly Cys Pro Ala Arg Met Ala Ser Cys Arg Ser Ile

1

5

10

15

Asp Ala Phe Asp Gln Gly Trp Gly Pro Ile Thr Tyr Ala Glu Ser His

20

25

30

Ser Ser Asp Gln Arg Pro Tyr Cys Trp His Tyr Ala Pro Lys Pro Cys

35

40

45

Gly Ile Val Pro Ala Ser Gln Val Cys Gly Pro Val Tyr Cys Phe Thr

50

55

60

Pro Ser Pro Val Val Val Gly Thr Thr Asp His His Gly Val Pro Thr

65

70

75

80

Tyr Ser Trp Gly Glu Asn Glu Thr Asp Val Leu Leu Leu Asn Asn Thr

85

90

95

Arg Pro Pro Gln Gly Asn Trp Phe Gly Cys Thr Trp Met Asn Gly Thr

100

105

110

Gly Phe Thr Lys Thr Cys Gly Gly Pro Pro Cys Asn Ile Gly Gly Val

115

120

125

Gly Asn Asn Thr Leu Thr Cys Pro Thr Asp Cys Phe Arg Lys His Pro

130

135

140

Glu Ala Thr Tyr Thr Lys Cys Gly Ser Gly Pro Trp Leu Thr Pro Arg

145

150

155

160

Cys Ile Val Asp Tyr Pro Tyr Arg Leu Trp His Tyr Pro Cys Thr Val

165

170

175

Asn Phe Thr Ile Phe Lys Val Arg Met Tyr Val Gly Gly Met Glu His

180

185

190

Arg Leu Asn Ala Ala Cys Asn Trp Thr Arg Gly Glu Arg Cys Asp Leu

195

200

205

Glu Asp Arg Asp Arg Ser Glu

210

215

<210> 32  
 <211> 192  
 <212> PRT  
 <213> Hepatitis C Virus

<400> 32

Gly Pro Ile Thr Tyr Ala Glu Ser His Ser Ser Asp Gln Arg Pro Tyr  
 1 5 10 15

Cys Trp His Tyr Ala Pro Lys Pro Cys Gly Ile Val Pro Ala Ser Gln  
 20 25 30

Val Cys Gly Pro Val Tyr Cys Phe Thr Pro Ser Pro Val Val Val Gly  
 35 40 45

Thr Thr Asp His His Gly Val Pro Thr Tyr Ser Trp Gly Glu Asn Glu  
 50 55 60

Thr Asp Val Leu Leu Leu Asn Asn Thr Arg Pro Pro Gln Gly Asn Trp  
 65 70 75 80

Phe Gly Cys Thr Trp Met Asn Gly Thr Gly Phe Thr Lys Thr Cys Gly  
 85 90 95

Gly Pro Pro Cys Asn Ile Gly Gly Val Gly Asn Asn Thr Leu Thr Cys  
 100 105 110

Pro Thr Asp Cys Phe Arg Lys His Pro Glu Ala Thr Tyr Thr Lys Cys  
 115 120 125

Gly Ser Gly Pro Trp Leu Thr Pro Arg Cys Ile Val Asp Tyr Pro Tyr  
 130 135 140

Arg Leu Trp His Tyr Pro Cys Thr Val Asn Phe Thr Ile Phe Lys Val  
 145 150 155 160

Arg Met Tyr Val Gly Gly Met Glu His Arg Leu Asn Ala Ala Cys Asn  
 165 170 175

Trp Thr Arg Gly Glu Arg Cys Asp Leu Glu Asp Arg Asp Arg Ser Glu  
 180 185 190

<210> 33  
 <211> 261

<212> PRT

<213> Hepatitis C Virus

<400> 33

Thr Thr Tyr Thr Thr Gly Gly Ala Ala Ser Arg Thr Thr Gly Thr Phe  
1 5 10 15

Thr Ser Leu Phe Asn Ala Gly Ser Ser Gln Lys Ile Gln Leu Ile Asn  
20 25 30

Thr Asn Gly Ser Trp His Ile Asn Arg Thr Ala Leu Asn Cys Asn Asp  
35 40 45

Ser Leu Asn Thr Gly Phe Leu Ala Ala Leu Phe Tyr Val His Arg Phe  
50 55 60

Asn Ala Ser Gly Cys Pro Ala Arg Met Ala Ser Cys Arg Ser Ile Asp  
65 70 75 80

Ala Phe Asp Gln Gly Trp Gly Pro Ile Thr Tyr Ala Glu Ser His Ser  
85 90 95

Ser Asp Gln Arg Pro Tyr Cys Trp His Tyr Ala Pro Lys Pro Cys Gly  
100 105 110

Ile Val Pro Ala Ser Gln Val Cys Gly Pro Val Tyr Cys Phe Thr Pro  
115 120 125

Ser Pro Val Val Val Gly Thr Thr Asp His His Gly Val Pro Thr Tyr  
130 135 140

Ser Trp Gly Glu Asn Glu Thr Asp Val Leu Leu Leu Asn Asn Thr Arg  
145 150 155 160

Pro Pro Gln Gly Asn Trp Phe Gly Cys Thr Trp Met Asn Gly Thr Gly  
165 170 175

Phe Thr Lys Thr Cys Gly Gly Pro Pro Cys Asn Ile Gly Gly Val Gly  
180 185 190

Asn Asn Thr Leu Thr Cys Pro Thr Asp Cys Phe Arg Lys His Pro Glu  
195 200 205

Ala Thr Tyr Thr Lys Cys Gly Ser Gly Pro Trp Leu Thr Pro Arg Cys  
210 215 220

Ile Val Asp Tyr Pro Tyr Arg Leu Trp His Tyr Pro Cys Thr Val Asn  
225 230 235 240

Phe Thr Ile Phe Lys Val Arg Met Tyr Val Gly Gly Met Glu His Arg  
 245 250 255

Leu Asn Ala Ala Cys  
 260

<210> 34  
 <211> 196  
 <212> PRT  
 <213> Hepatitis C Virus

<400> 34  
 Thr Thr Tyr Thr Thr Gly Gly Ala Ala Ser Arg Thr Thr Gly Thr Phe  
 1 5 10 15

Thr Ser Leu Phe Asn Ala Gly Ser Ser Gln Lys Ile Gln Leu Ile Asn  
 20 25 30

Thr Asn Gly Ser Trp His Ile Asn Arg Thr Ala Leu Asn Cys Asn Asp  
 35 40 45

Ser Leu Asn Thr Gly Phe Leu Ala Ala Leu Phe Tyr Val His Arg Phe  
 50 55 60

Asn Ala Ser Gly Cys Pro Ala Arg Met Ala Ser Cys Arg Ser Ile Asp  
 65 70 75 80

Ala Phe Asp Gln Gly Trp Gly Pro Ile Thr Tyr Ala Glu Ser His Ser  
 85 90 95

Ser Asp Gln Arg Pro Tyr Cys Trp His Tyr Ala Pro Lys Pro Cys Gly  
 100 105 110

Ile Val Pro Ala Ser Gln Val Cys Gly Pro Val Tyr Cys Phe Thr Pro  
 115 120 125

Ser Pro Val Val Val Gly Thr Thr Asp His His Gly Val Pro Thr Tyr  
 130 135 140

Ser Trp Gly Glu Asn Glu Thr Asp Val Leu Leu Leu Asn Asn Thr Arg  
 145 150 155 160

Pro Pro Gln Gly Asn Trp Phe Gly Cys Thr Trp Met Asn Gly Thr Gly  
 165 170 175

Phe Thr Lys Thr Cys Gly Gly Pro Pro Cys Asn Ile Gly Gly Val Gly

180	185	190
Asn Asn Thr Leu		
195		
<210> 35		
<211> 192		
<212> PRT		
<213> Hepatitis C Virus		
<400> 35		
Tyr Glu Val Arg Asn Val Ser Gly Val Thr His Val Thr Asn Asp Cys		
1 5 10 15		
Ser Asn Ser Ser Ile Val Tyr Glu Ala Ala Asp Met Ile Met His Thr		
20 25 30		
Pro Gly Cys Val Pro Cys Val Arg Glu Gly Asn Thr Ser Arg Cys Trp		
35 40 45		
Val Ala Leu Thr Pro Thr Leu Ala Ala Arg Asn Ala Ser Val Pro Thr		
50 55 60		
Ala Ala Ile Arg Arg His Ile Asp Leu Leu Val Gly Thr Ala Thr Phe		
65 70 75 80		
Cys Ser Ala Met Tyr Val Gly Asp Leu Cys Gly Ser Val Phe Leu Val		
85 90 95		
Ser Gln Leu Phe Thr Phe Ser Pro Arg Arg His His Thr Val Gln Asp		
100 105 110		
Cys Asn Cys Ser Ile Tyr Pro Gly His Val Thr Gly His Arg Met Ala		
115 120 125		
Trp Asp Met Met Met Asn Trp Ser Pro Thr Ala Ala Leu Val Val Ser		
130 135 140		
Gln Leu Leu Arg Ile Pro Gln Ala Val Met Asp Met Val Ala Gly Ala		
145 150 155 160		
His Trp Gly Val Leu Ala Gly Leu Ala Tyr Tyr Ser Met Ala Gly Asn		
165 170 175		
Trp Ala Lys Val Leu Ile Val Met Leu Leu Phe Ala Gly Val Asp Gly		
180 185 190		